

(No Model.)

W. C. MARR.
SPIRAL CONVEYER.

No. 371,609.

Patented Oct. 18, 1887.

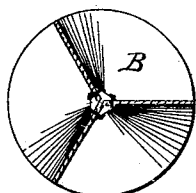
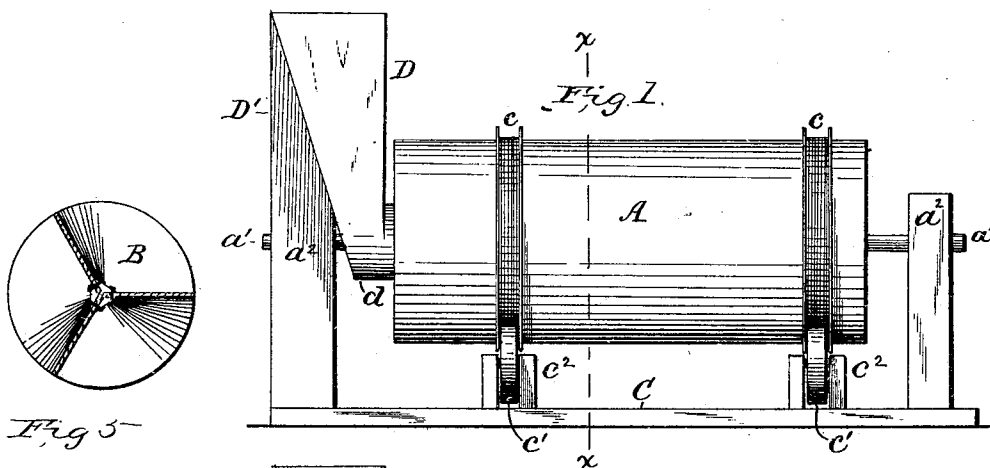


Fig 5

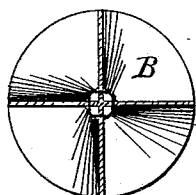
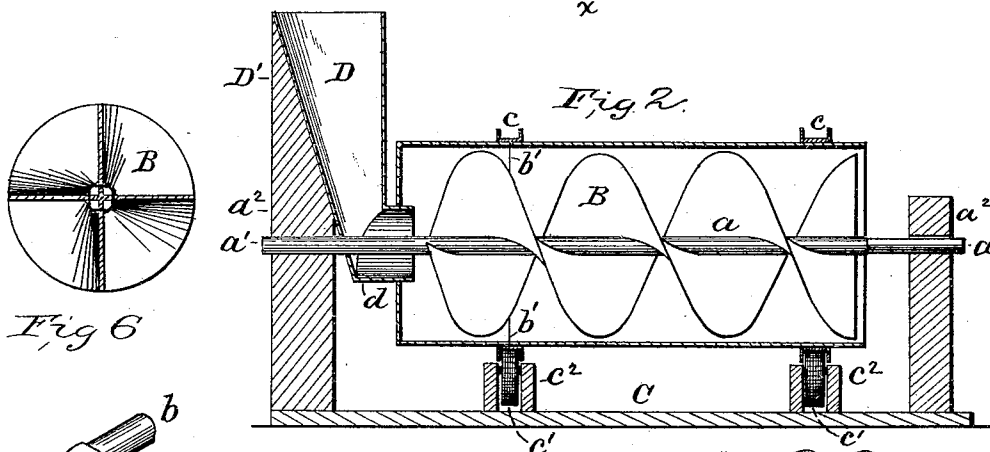


Fig 6

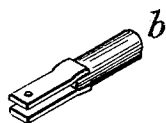


Fig 7

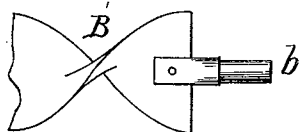


Fig 8

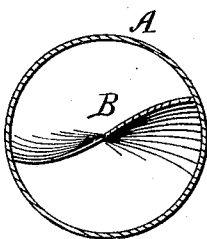


Fig 4

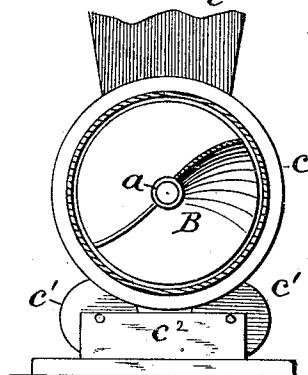


Fig 3

Witnesses

W. A. Rosenbaum
G. B. Towles

Inventor

William C. Marr

By *his* Attorney *W. Purris*

UNITED STATES PATENT OFFICE.

WILLIAM CULVER MARR, OF ONAWA, IOWA.

SPIRAL CONVEYER.

SPECIFICATION forming part of Letters Patent No. 371,609, dated October 18, 1887.

Application filed September 24, 1886. Renewed June 4, 1887. Serial No. 240,344. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM CULVER MARR, a citizen of the United States of America, residing at Onawa, in the county of Monona and State of Iowa, have invented certain new and useful Improvements in Spiral Conveyers, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to spiral conveyers constructed of solid metal plates without seams, and placed in cylindrical cases, as hereinafter fully set forth and claimed.

In the accompanying drawings, Figure 1 is a side elevation. Fig. 2 is a vertical longitudinal section. Fig. 3 is a cross-section on line xx of Fig. 1, looking toward the front end of the machine. Fig. 4 is a cross-section of a cylinder inclosing a conveyer without a shaft. Figs. 5 and 6 show modifications in the construction of conveyers. Figs. 7 and 8 are detail views of the conveyer-journals.

A is a cylindrical case constructed to inclose a spiral conveyer, B, which is formed of a solid metallic plate.

The conveyer may be constructed with or without journals to revolve in or with the cylindrical casing.

When the conveyers are constructed with journals to revolve in and independently of the casing, the plates of which the conveyers are made may be rolled with a central enlargement, a , extended at the ends to form the journals a' , placed in suitable bearings, a'' . These journals may be formed by cutting away the plates and turning the journals on the extended ends of the central portion.

The plates may be rolled flat and the conveyers, formed of flat plates, may be provided with journals b , formed separate from and adapted to be attached to the ends of the conveyer-plates, as shown in Figs. 7 and 8.

The cylindrical cases may be made in sections and connected by joints, as shown at b' in Fig. 2. The conveyers may also be made in sections, and may be connected by couplings (not shown) adapted to be riveted to the ends of the sections of the conveyer-plates.

The cylinders are provided with annular grooves c , formed on or attached to the cylinders, forming ways for friction-rollers c' ,

mounted in suitable bearings, c'' , attached to a supporting-base, C. The cylinder is supported by and may be revolved upon the rollers, and it is provided with the bearing-grooves and rollers at such points as may be required to firmly support the cylinder in position, and especially at the joints of the cylinder.

D designates a hopper, attached to and supported in position by the post D' , and provided with an elbow, d , extended loosely through an opening in the front end of the cylinder, so that the cylinder, when rotated, may revolve freely around the elbowed end of the hopper.

The friction-rollers may be arranged at suitable points above and at the sides of the cylinders for the purpose of supporting them firmly in position, and the flanges of the grooved ways prevent the cylinders from moving endwise.

The conveyers may be made with two, three, or more flights, as shown. When they are made of more than two flights, it is evident that the ends of the couplings and journals, which are fastened to the conveyer-plates, must be constructed so as to fit in the angles of the blades, as seen in Figs. 5 and 6.

The plates of which the spiral conveyers are made may be formed in a rolling-mill by methods and mechanism similar to those employed in rolling fence posts, girder-rails, railroad-rails, and other articles having two, three, and four flanges or wings, or by any other suitable method and devices; and it is evident that these winged plates may be readily twisted as they pass through the rolling-mill, or subsequently, by means of suitable devices and the requisite power, so as to form the plates into the spiral shape required.

The conveyers and cylinders may be driven by any suitable mechanism not shown, and the conveyers may be separated from and used without the cylindrical casing, similar to the method of using the spiral conveyer set forth in my Patent No. 324,859.

Having described my invention, what I claim as new is—

1. A spiral conveyer having two or more flights constructed of a solid seamless plate, substantially as and for the purposes described.

2. The combination, with a cylindrical casing, A, of the spiral conveyer B, having two

or more flights constructed of a solid seamless plate and placed within the casing, substantially as and for the purposes described.

3. The combination, with a cylindrical casing, A, of the spiral conveyer B, having two or more flights constructed of a solid seamless plate placed within the casing, and provided with journals arranged upon suitable bearings, whereby the conveyer may be revolved within the casing, substantially as and for the purposes described.

4. The combination, with the cylindrical

casing A, provided with annular ways *c*, and the spiral conveyer B, placed within the casing, of the friction-rollers *c'*, constructed and arranged to run in the annular ways and to support the conveyer-casing, substantially as and for the purposes described.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM CULVER MARR.

Witnesses:

W. J. MAUGHLIN,
J. S. MAUGHLIN.